

What is claimed is:

1. A silicone contact lens comprising a center stiffness of about 1 psi•mm² or
5 less and a lenticular junction stiffness of about 4.4 psi•mm² or less, wherein the lens
exhibits an advancing contact angle of less than about 120 degrees.
2. The contact lens of claim 1, wherein lenticular junction stiffness is about 4
psi•mm² or less.
- 10 3. The lens of claim 1, wherein a center stiffness of about 0.5 psi•mm² or less
and a lenticular junction stiffness of about 4 psi•mm² or less.
4. The contact lens of claim 1, 2, or 3, wherein the advancing contact angle is
15 less than about 80 degrees.
5. The contact lens of claim 1, 2 or 3, wherein the advancing contact angle is
less than about 55 degrees.
- 20 6. The lens of claim 4, further comprising an internal wetting agent selected
from the group consisting of polyamides, polylactams, polyimides, polylactones,
and combinations thereof.
7. The contact lens of claim 4, further comprising the reaction product of a
25 silicone based macromer and a polymerizable mixture comprising Si8-10
monomethacryloxy terminated polydimethyl siloxane, polydimethylsiloxane other
than Si8-10 monomethacryloxy terminated polydimethyl siloxane, and a hydrophilic
monomer.

8. The contact lens of claim 4, further comprising the reaction product of a silicone based macromer Group Transfer Polymerization product and a polymerizable mixture comprising Sig-10 monomethacryloxy terminated polydimethyl siloxane, polydimethylsiloxane other than Sig-10 monomethacryloxy terminated polydimethyl siloxane, and a hydrophilic monomer.
9. The contact lens of claim 7, wherein the macromer is the product of a reaction mixture comprising the 2-hydroxyethyl methacrylate, methyl methacrylate, methacryloxypropyltris(trimethylsiloxy)silane, and mono-methacryloxypropyl terminated mono-butyl terminated polydimethylsiloxane.
10. The contact lens of claim 8, wherein the macromer is the product of a reaction mixture comprising the 2-hydroxyethyl methacrylate, methyl methacrylate, methacryloxypropyltris(trimethylsiloxy)silane, and mono-methacryloxypropyl terminated mono-butyl terminated polydimethylsiloxane.
11. The contact lens of claim 9, wherein the macromer is the polymerization product of reaction mixture comprising about 19.1 moles of 2-hydroxyethyl methacrylate, about 2.8 moles of methyl methacrylate, about 7.9 moles of methacryloxypropyltris(trimethylsiloxy)silane, and about 3.3 moles of mono-methacryloxypropyl terminated mono-butyl terminated polydimethylsiloxane.
12. The contact lens of claim 10, wherein the macromer is the polymerization product of reaction mixture comprising about 19.1 moles of 2-hydroxyethyl methacrylate, about 2.8 moles of methyl methacrylate, about 7.9 moles of methacryloxypropyltris(trimethylsiloxy)silane, and about 3.3 moles of mono-methacryloxypropyl terminated mono-butyl terminated polydimethylsiloxane.

13. The contact lens of claim 9, wherein the polymerizable mixture comprises Si₈₋₁₀ monomethacryloxy terminated polydimethyl siloxane; methacryloxypropyl tris(trimethyl siloxy) silane; N,N-dimethylacrylamide; 2-hydroxy ethyl methacrylate; and tetraethyleneglycol dimethacrylate.

14. The contact lens of claim 10, wherein the polymerizable mixture comprises Si₇₋₉ monomethacryloxy terminated polydimethyl siloxane; methacryloxypropyl tris(trimethylsiloxy) silane; N,N-dimethylacrylamide; 2-hydroxyethyl methacrylate; and tetraethyleneglycol dimethacrylate.

15. The contact lens of claim 13, wherein the macromer is present in an amount of about 10 to about 60 wt percent, the Si₈₋₁₀ monomethacryloxy terminated polydimethyl siloxane is present in an amount of about 0 to about 45 wt percent; the methacryloxypropyl tris(trimethylsiloxy) silane is present in an amount of about 0 to about 40 wt percent; the N,N-dimethylacrylamide is present in an amount of about 5 to about 40 wt percent; the 2-hydroxyethyl methacrylate is present in an amount of about 0 to about 10 wt percent; and the tetraethyleneglycol dimethacrylate is present in an amount of about 0 to about 5 wt percent.

16. The contact lens of claim 14, wherein the macromer is present in an amount of about 10 to about 60 wt percent, the Si₈₋₁₀ monomethacryloxy terminated polydimethyl siloxane is present in an amount of about 0 to about 45 wt percent; the methacryloxypropyl tris(trimethyl siloxy) silane is present in an amount of about 0 to about 40 wt percent; the N,N-dimethylacrylamide is present in an amount of about 5 to about 40 wt percent; the 2-hydroxyethyl methacrylate is present in an amount of about 0 to about 10 wt percent; and the tetraethyleneglycol dimethacrylate is present in an amount of about 0 to about 5 wt percent.

17. The contact lens of claim 13, wherein the macromer is present in an amount of about 15 to about 25 wt percent, the Sig₁₀ monomethacryloxy terminated polydimethyl siloxane is present in an amount of about 20 to about 30 wt percent; the methacryloxypropyl tris(trimethyl siloxy) silane is present in an amount of about 15 to about 25 wt percent; the N,N-dimethylacrylamide is present in an amount of about 20 to about 30 wt percent; the 2-hydroxyethyl methacrylate is present in an amount of about 2 to about 7 wt percent; and the tetraethyleneglycol dimethacrylate is present in an amount of about 0 to about 5 wt percent.

18. The contact lens of claim 14, wherein the macromer is present in an amount of about 15 to about 25 wt percent, the Sig₁₀ monomethacryloxy terminated polydimethyl siloxane is present in an amount of about 20 to about 30 wt percent; the methacryloxypropyl tris(trimethyl siloxy) silane is present in an amount of about 15 to about 25 wt percent; the N,N-dimethyl acrylamide is present in an amount of about 20 to about 30 wt percent; the 2-hydroxyethyl methacrylate is present in an amount of about 2 to about 7 wt percent; and the tetraethyleneglycol dimethacrylate is present in an amount of about 0 to about 5 wt percent.

19. The contact lens of claim 13, wherein the polymerizable mixture further comprises poly(N-vinyl pyrrolidinone).

20. The contact lens of claim 14, wherein the polymerizable mixture further comprises poly(N-vinyl pyrrolidinone).

21. The contact lens of claim 15, wherein the polymerizable mixture further comprises about 0 to about 10 wt percent poly(N-vinyl pyrrolidinone).

22. The contact lens of claim 16, wherein the polymerizable mixture further comprises about 0 to about 10 wt percent poly(N-vinyl pyrrolidinone).

23. The contact lens of claim 17, wherein the polymerizable mixture further comprises about 2 to about 7 wt percent poly(N-vinyl pyrrolidinone).

24. The contact lens of claim 18, wherein the polymerizable mixture further
5 comprises about 2 to about 7 wt percent poly(N-vinyl pyrrolidinone).

25. The contact lens of claim 4, further comprising a coating selected from the group consisting of poly(acrylic acid), poly(methacrylic acid), poly(maleic acid), poly(itaconic acid), poly(acrylamide), poly(dimethacrylamide), block or random
10 copolymers of (meth)acrylic acid, acrylic acid, maleic acid, itaconic acid with any reactive vinyl monomer, carboxymethylated polymers, such as carboxymethylcellulose, dextran, polyvinyl alcohol, polyethylene oxide, poly(2-hydroxy ethyl methacrylate), polysulfonates, polysulfates, polylactam, polyglycolic acid, polyamines, and mixtures thereof.

15 26. The contact lens of claim 7, further comprising a coating selected from the group consisting of poly(acrylic acid), poly(methacrylic acid), poly(maleic acid), poly(itaconic acid), poly(acrylamide), poly(dimethacrylamide), block or random copolymers of (meth)acrylic acid, acrylic acid, maleic acid, itaconic acid with any
20 reactive vinyl monomer, carboxymethylated polymers, such as carboxymethylcellulose, dextran, polyvinyl alcohol, polyethylene oxide, poly(2-hydroxyethyle methacrylate), polysulfonates, polysulfates, polylactam, polyglycolic acid, polyamines, and mixtures thereof.

27. The contact lens of claim 8, further comprising a coating selected from the group consisting of poly(acrylic acid), poly(methacrylic acid), poly(maleic acid), poly(itaconic acid), poly(acrylamide), poly(dimethacrylamide), block or random
5 copolymers of (meth)acrylic acid, acrylic acid, maleic acid, itaconic acid with any reactive vinyl monomer, carboxymethylated polymers, such as carboxymethylcellulose, dextran, polyvinyl alcohol, polyethylene oxide, poly(2-hydroxyethyl methacrylate), polysulfonates, polysulfates, polylactam, polyglycolic acid, polyamines, and mixtures thereof.
- 10 28. The contact lens of claim 26, wherein the coating is poly(acrylic acid), poly(acrylamide), or poly(2-hydroxyethyl methacrylate).
29. The contact lens of claim 27, wherein the coating is poly(acrylic acid),
15 poly(acrylamide), or poly(2-hydroxyethyl methacrylate).
30. The contact lens of claim 9, further comprising a coating selected from the group consisting of poly(acrylic acid), poly(methacrylic acid), poly(maleic acid), poly(itaconic acid), poly(acrylamide), poly(dimethacrylamide), block or random
20 copolymers of (meth)acrylic acid, acrylic acid, maleic acid, itaconic acid with any reactive vinyl monomer, carboxymethylated polymers, such as carboxymethylcellulose, dextran, polyvinyl alcohol, polyethylene oxide, poly(2-hydroxyethyl methacrylate), polysulfonates, polysulfates, polylactam, polyglycolic acid, polyamines, and mixtures thereof.

31. The contact lens of claim 15, further comprising a coating selected from the group consisting of poly(acrylic acid), poly(methacrylic acid), poly(maleic acid), poly(itaconic acid), poly(acrylamide), poly(dimethacrylamide), block or random copolymers of (meth)acrylic acid, acrylic acid, maleic acid, itaconic acid with any reactive vinyl monomer, carboxymethylated polymers, such as carboxymethylcellulose, dextran, polyvinyl alcohol, polyethylene oxide, poly(2-hydroxyethyle methacrylate), polysulfonates, polysulfates, polylactam, polyglycolic acid, polyamines, and mixtures thereof.
32. The contact lens of claim 19, further comprising a coating selected from the group consisting of poly(acrylic acid), poly(methacrylic acid), poly(maleic acid), poly(itaconic acid), poly(acrylamide), poly(dimethacrylamide), block or random copolymers of (meth)acrylic acid, acrylic acid, maleic acid, itaconic acid with any reactive vinyl monomer, carboxymethylated polymers, such as carboxymethylcellulose, dextran, polyvinyl alcohol, polyethylene oxide, poly(2-hydroxyethyle methacrylate), polysulfonates, polysulfates, polylactam, polyglycolic acid, polyamines, and mixtures thereof.
33. A method for significantly reducing SEALs and back-trapped debris in a silicone hydrogel lens, comprising the step of providing a contact lens comprising a center stiffness of about $1 \text{ psi} \cdot \text{mm}^2$ or less and a lenticular junction stiffness of about $4.4 \text{ psi} \cdot \text{mm}^2$ or less, wherein the lens exhibits an advancing contact angle of less than about 120 degrees.
34. The method of claim 33, wherein the lens provided comprises a center stiffness less than about $1 \text{ psi} \cdot \text{mm}^2$ and the lenticular junction stiffness less than about $4 \text{ psi} \cdot \text{mm}^2$.

35. The method of claim 33, wherein the lens provided comprises a center stiffness less than about $0.5 \text{ psi} \cdot \text{mm}^2$ and the lenticular junction stiffness less than about $4 \text{ psi} \cdot \text{mm}^2$.
- 5 36. The method of claim 33, 34, or 35 wherein the lens exhibits an advancing contact angle exhibited of less than about 80 degrees.